Course Material
OpenSolver

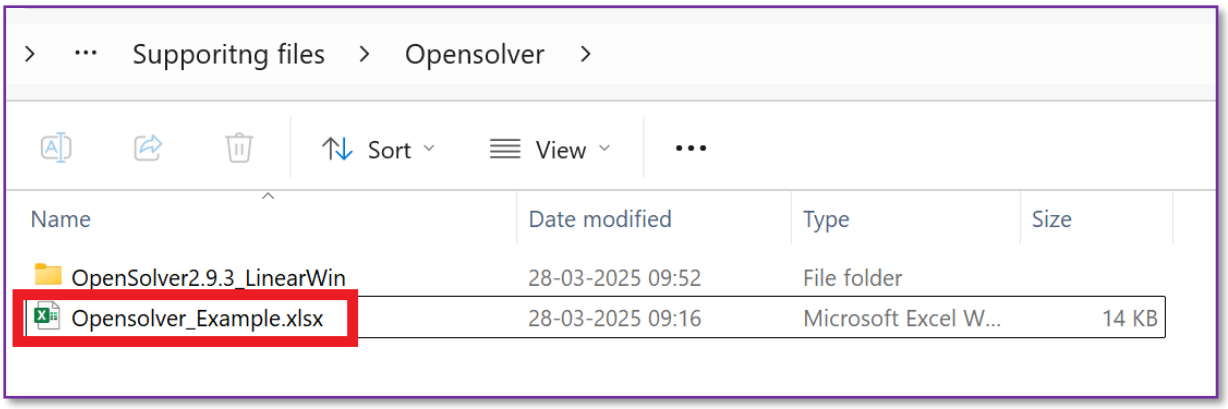
Table of Contents

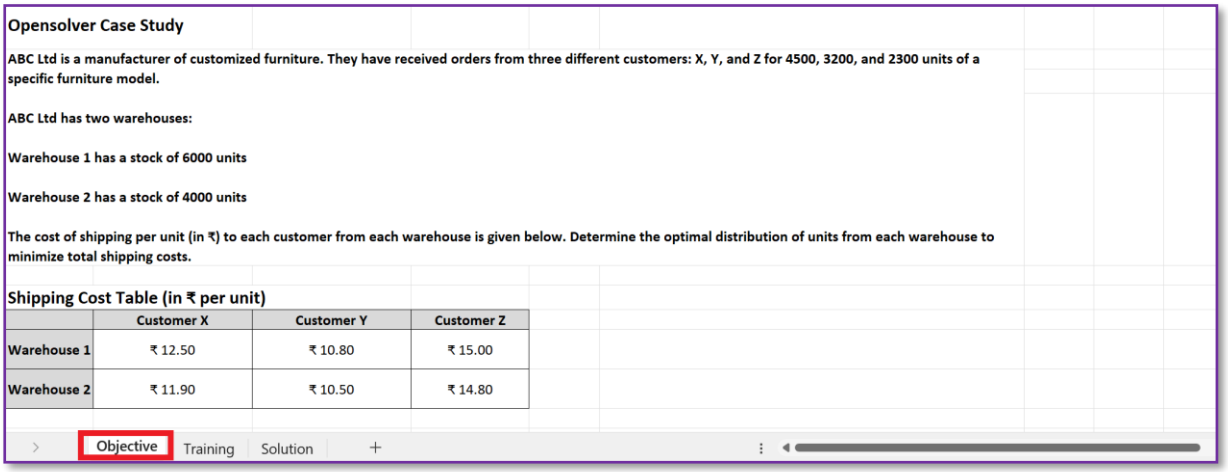
Installation 1
OpenSolver – User guide 4

Installation

Sign Up/Log In:

1. Download the **OpenSolver** folder from the shared Google Drive.
2. Open the **Opensolver_Example.xlsx** file. The case study details are provided in the **Objective** sheet for reference. Review it carefully to understand the problem statement.





Opensolver Case Study

ABC Ltd is a manufacturer of customized furniture. They have received orders from three different customers: X, Y, and Z for 4500, 3200, and 2300 units of a specific furniture model.

ABC Ltd has two warehouses:

Warehouse 1 has a stock of 6000 units

Warehouse 2 has a stock of 4000 units

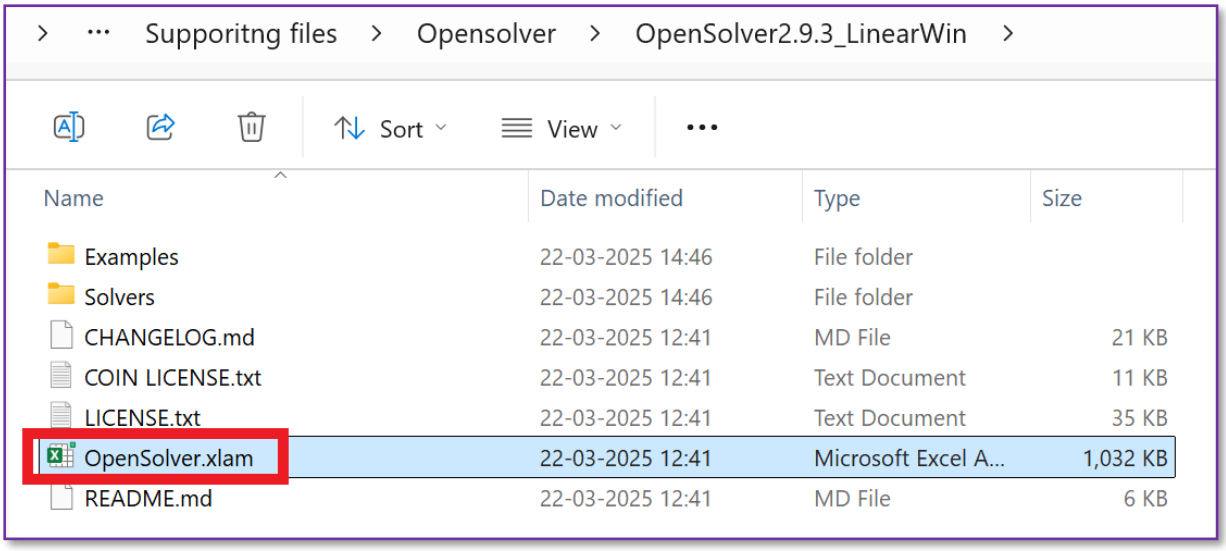
The cost of shipping per unit (in ₹) to each customer from each warehouse is given below. Determine the optimal distribution of units from each warehouse to minimize total shipping costs.

Shipping Cost Table (in ₹ per unit)

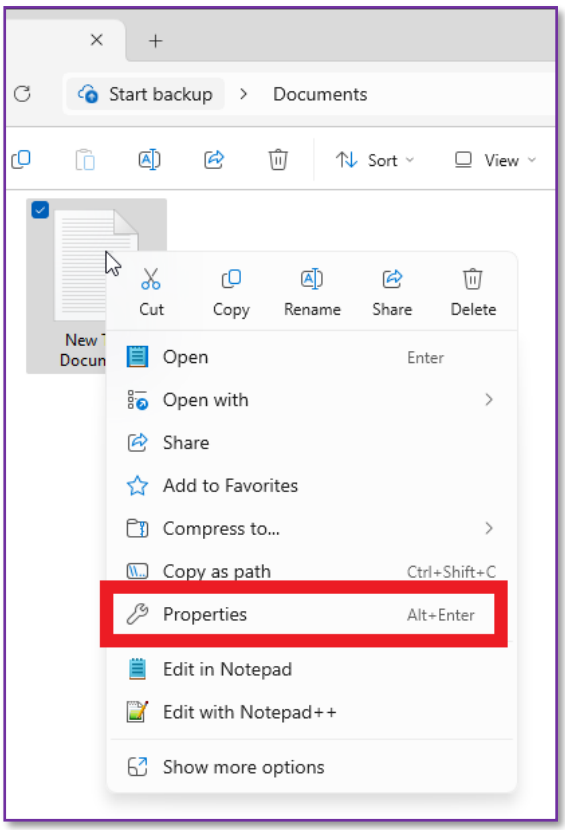
	Customer X	Customer Y	Customer Z
Warehouse 1	₹ 12.50	₹ 10.80	₹ 15.00
Warehouse 2	₹ 11.90	₹ 10.50	₹ 14.80

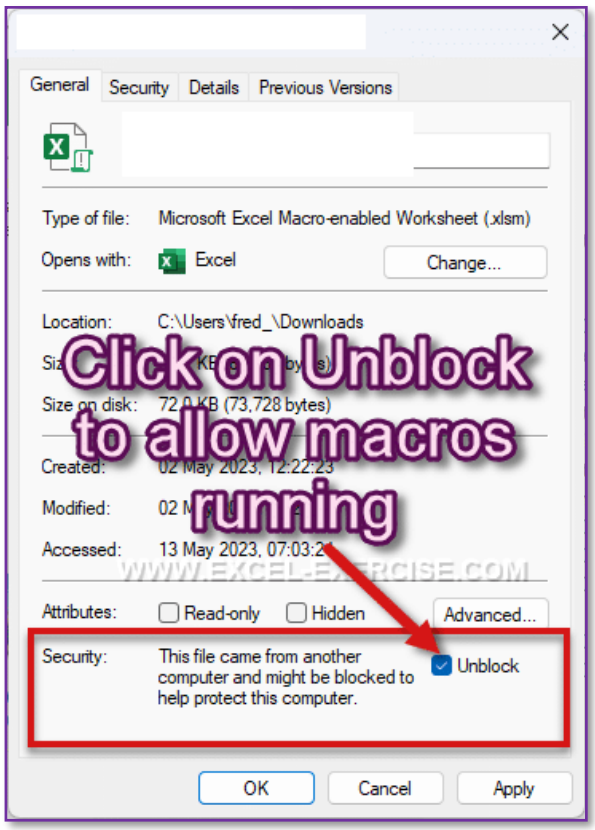
Objective | Training | Solution

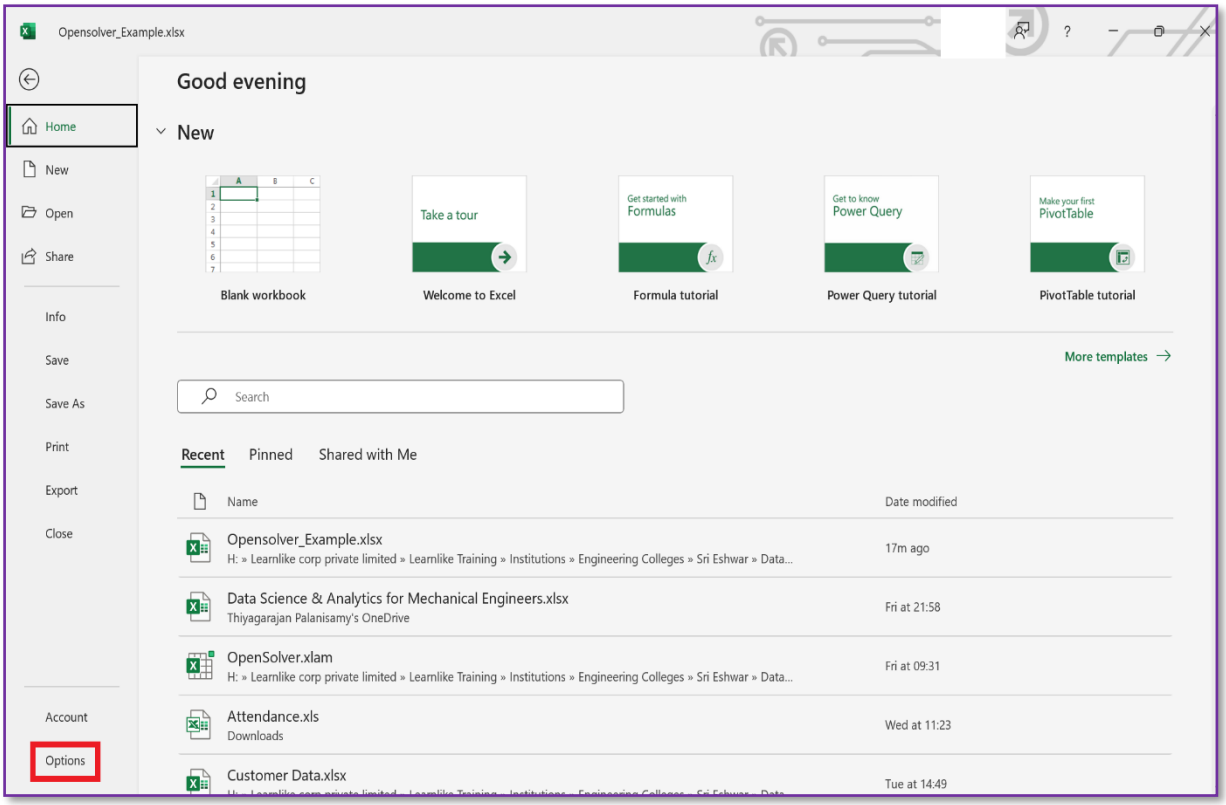
3. Double click on the **OpenSolver.xlam** to run the macro.



4. If any error is encountered while running the macro use the following methods to resolve. Right-click on the macro file, select **Properties**, and check **Unblock** under the **General** tab. After unblocking, open Excel, go to **File → Options → Trust Center → Trust Center Settings → Macro Settings**, and select **Enable all macros** to run the OpenSolver add-in.






Opensolver_Example.xlsx
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Take a tour
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Get started with
Formulas
Formula tutorial
Get to know
Power Query
Power Query tutorial
Make your first
PivotTable
PivotTable tutorial
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Customer Data.xlsx
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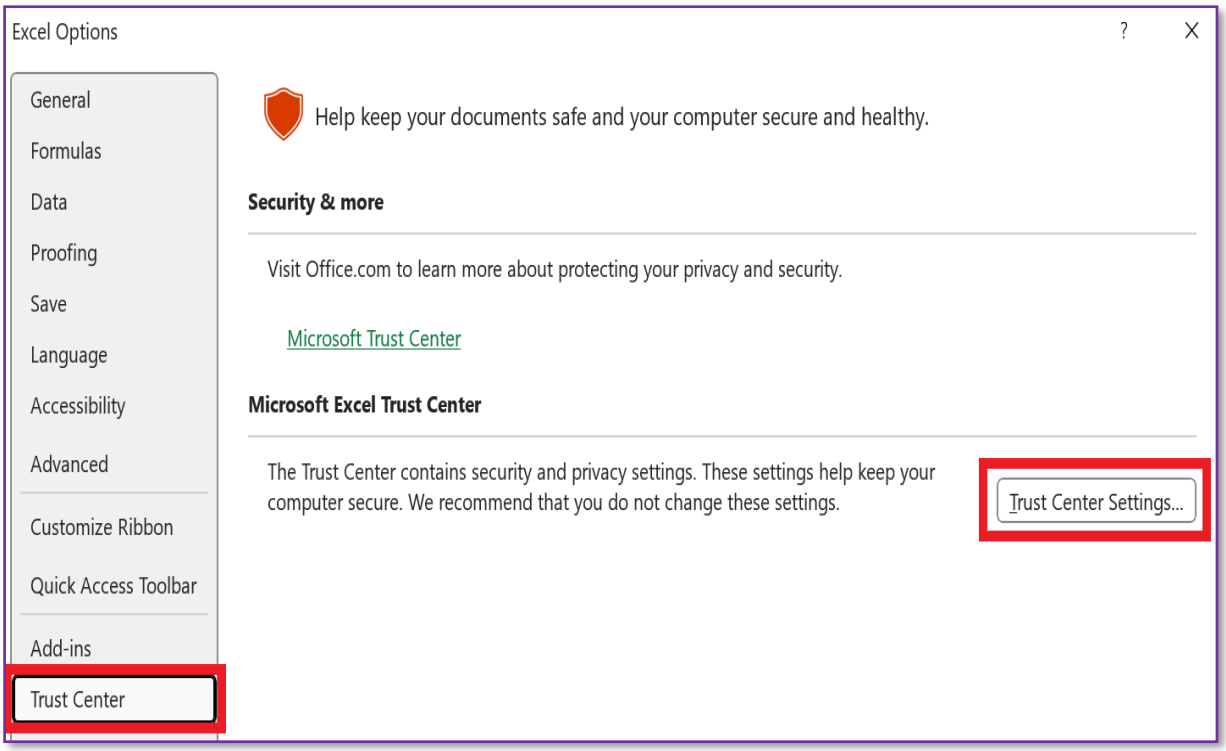
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Data
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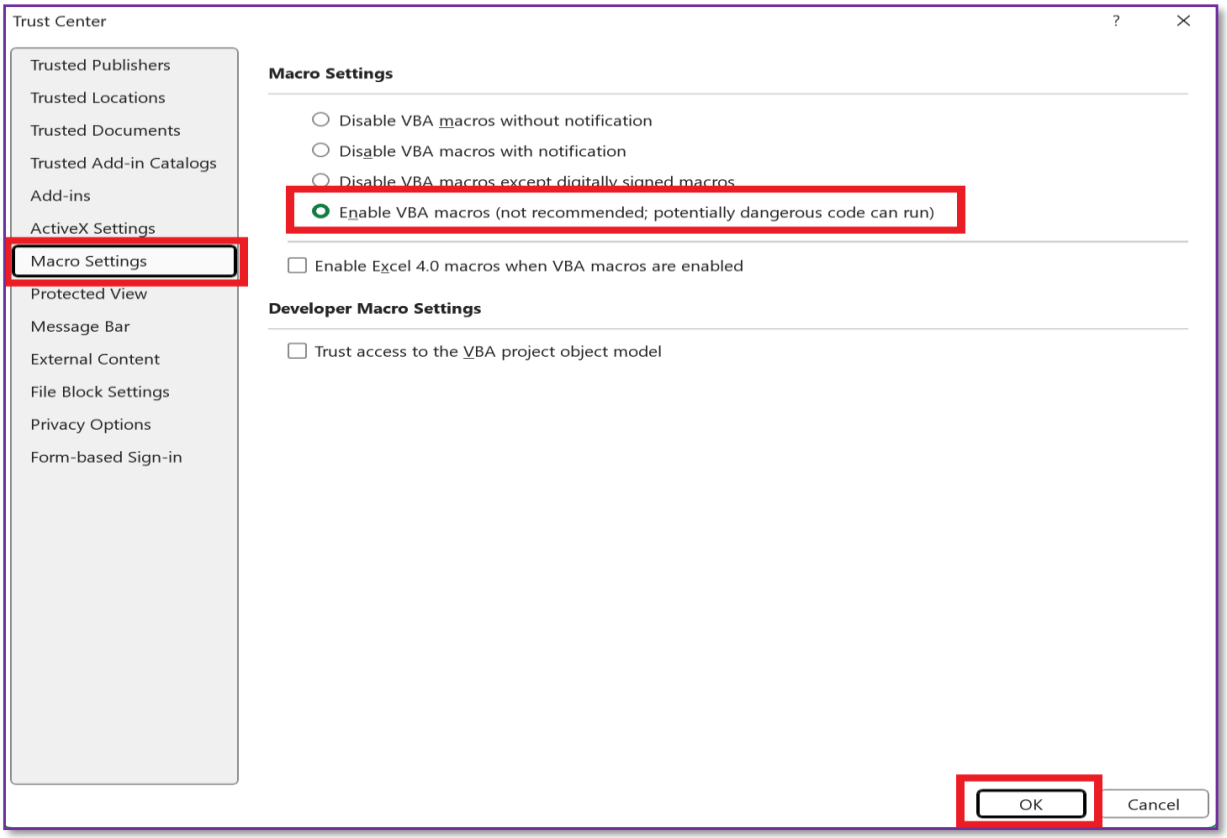
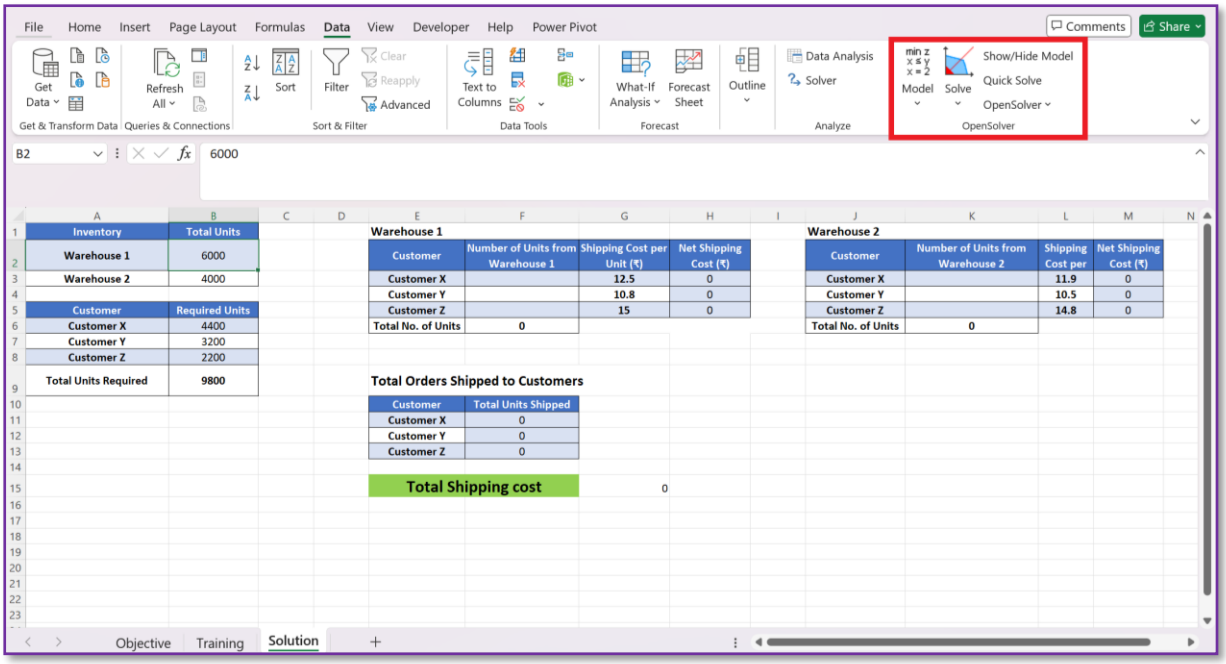
Trust Center
Help keep your documents safe and your computer secure and healthy.
Security & more
Visit Office.com to learn more about protecting your privacy and security.
Microsoft Trust Center
Microsoft Excel Trust Center
The Trust Center contains security and privacy settings. These settings help keep your computer secure. We recommend that you do not change these settings.
Trust Center Settings...

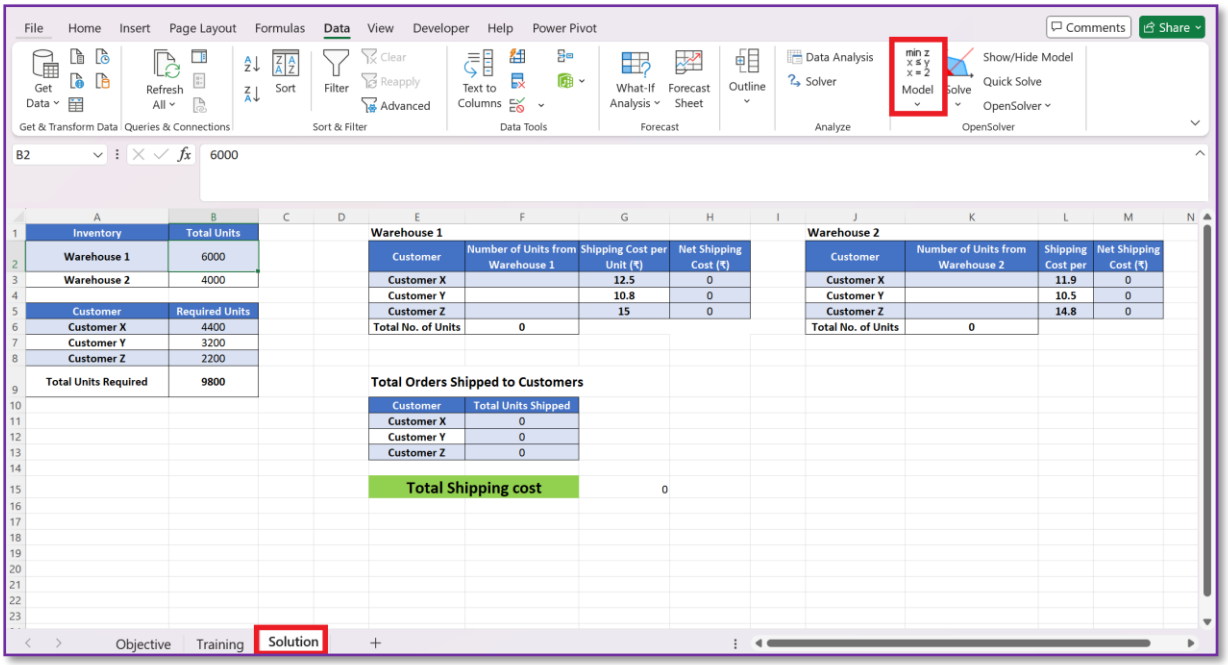


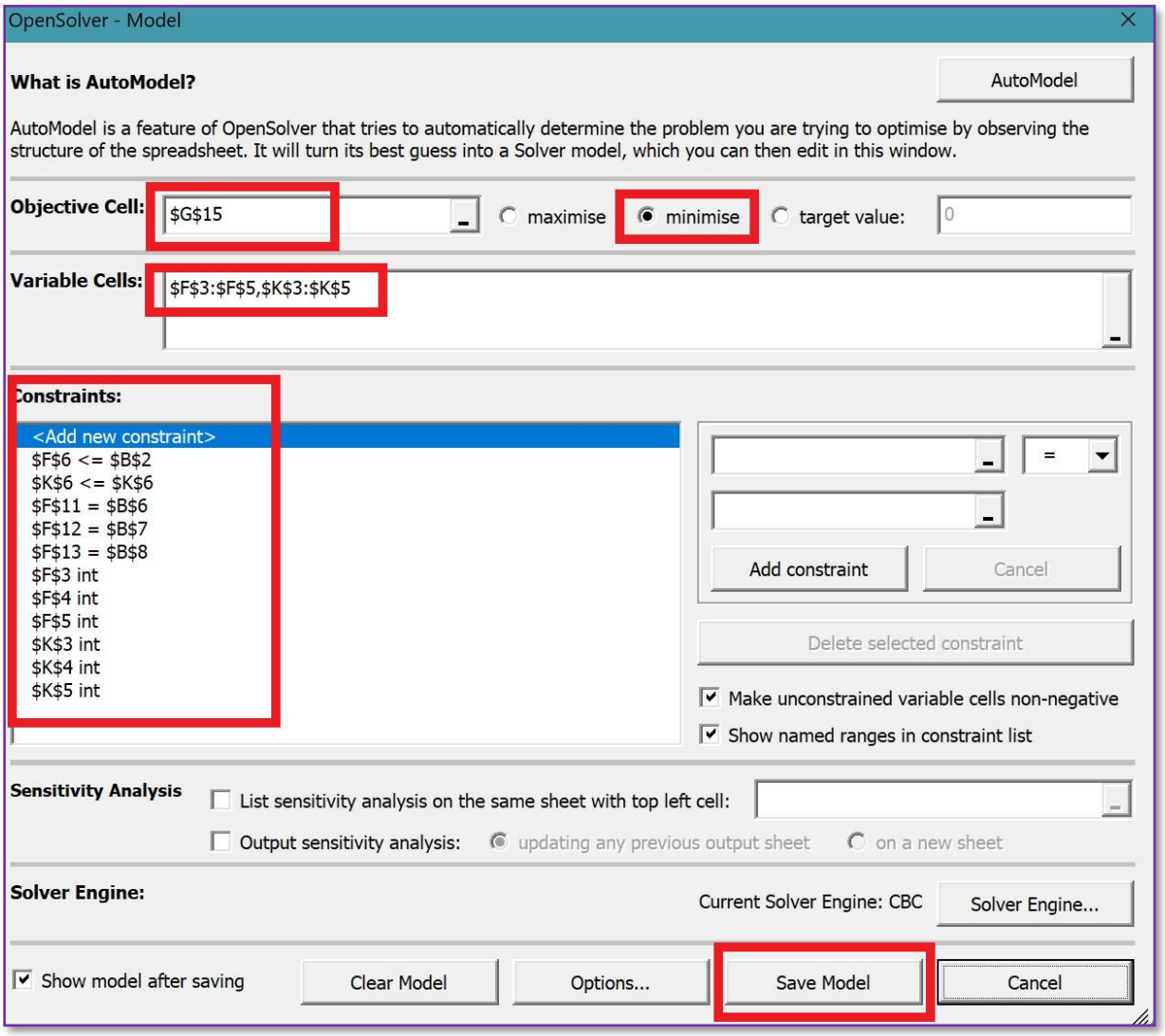
OpenSolver – User guide

1. Go to the **Data** tab in Excel and check if the OpenSolver add-in is activated.

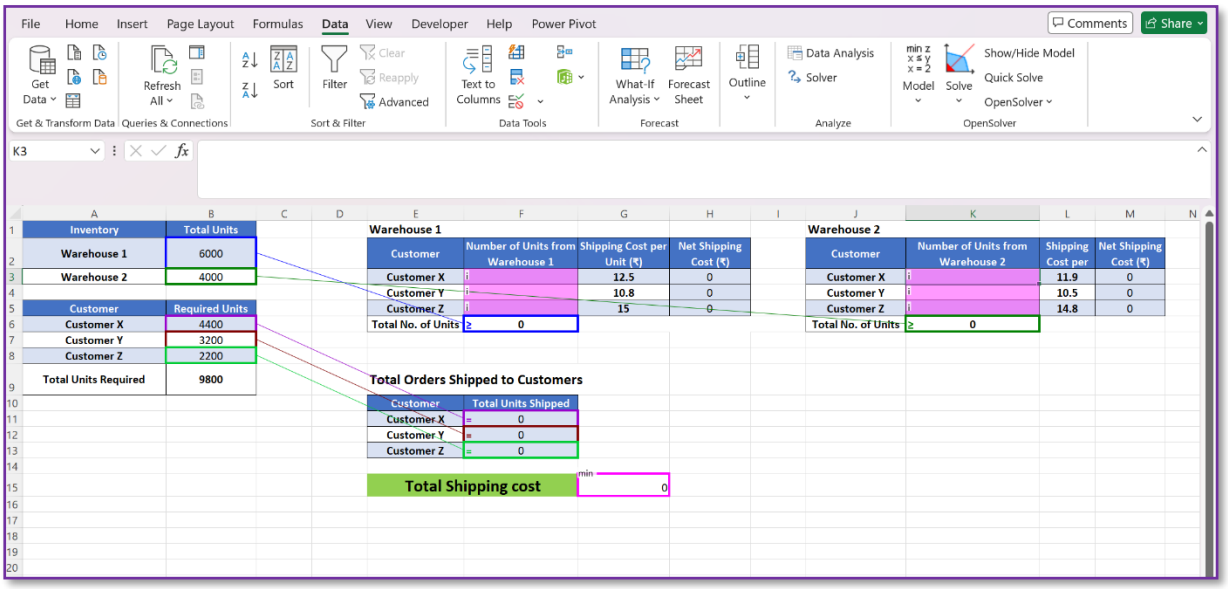


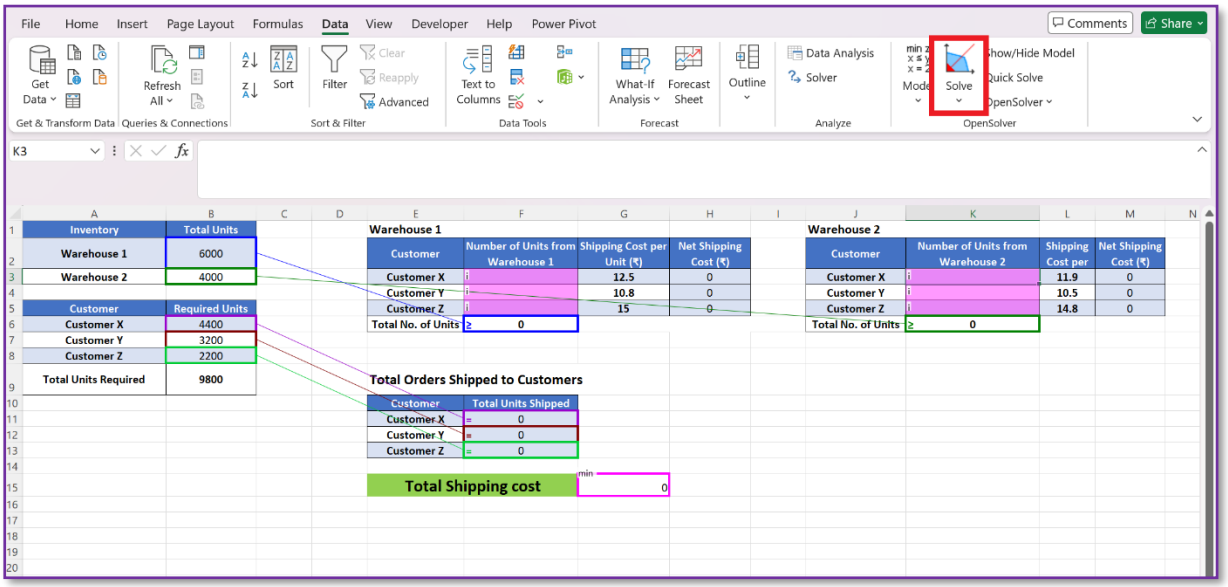
2. All calculations have been pre-set in the **Solution** sheet. Navigate to this sheet and click on **Model** to add constraints for the OpenSolver calculation. Ensure that all constraints are added exactly as shown in the provided screenshot, then click on **Save Model** once done.

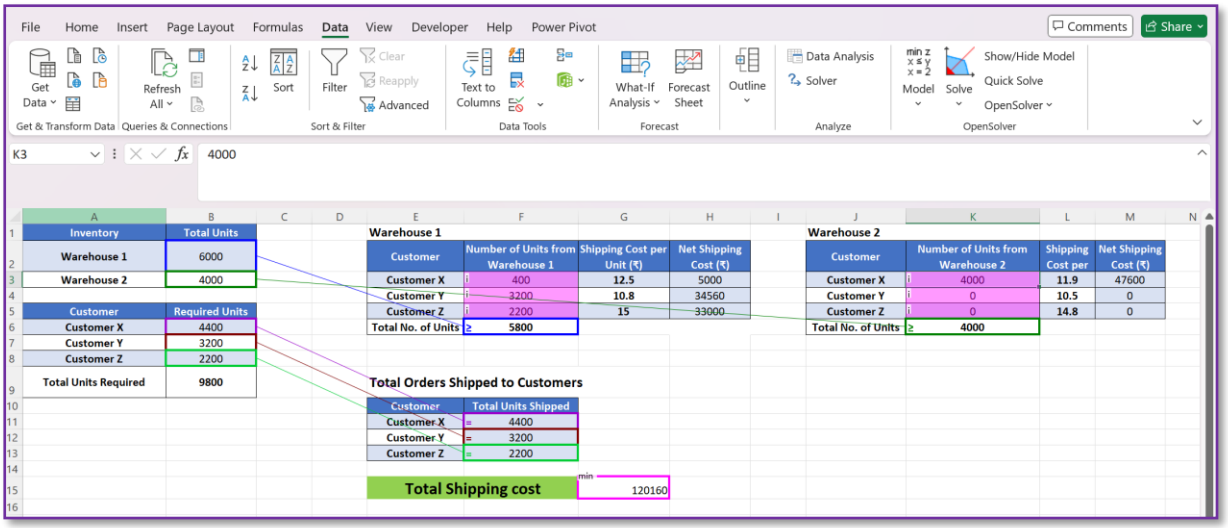

File Home Insert Page Layout Formulas Data View Developer Help Power Pivot
Comments Share
Get Data Refresh All Sort Filter Clear Reapply Advanced Text to Columns What-If Analysis Forecast Sheet Outline Data Analysis Solver Model Solve Show/Hide Model Quick Solve OpenSolver
Get & Transform Data Queries & Connections Sort & Filter Data Tools Forecast Analyze OpenSolver
B2 6000
Inventory Total Units
Warehouse 1 6000
Warehouse 2 4000
Customer Required Units
Customer X 4400
Customer Y 3200
Customer Z 2200
Total Units Required 9800
Warehouse 1
Customer Number of Units from Warehouse 1 Shipping Cost per Unit (₹) Net Shipping Cost (₹)
Customer X 12.5 0
Customer Y 10.8 0
Customer Z 15 0
Total No. of Units 0
Warehouse 2
Customer Number of Units from Warehouse 2 Shipping Cost per Net Shipping Cost (₹)
Customer X 11.9 0
Customer Y 10.5 0
Customer Z 14.8 0
Total No. of Units 0
Total Orders Shipped to Customers
Customer Total Units Shipped
Customer X 0
Customer Y 0
Customer Z 0
Total Shipping cost 0
Objective Training Solution


OpenSolver - Model
What is AutoModel?
AutoModel
AutoModel is a feature of OpenSolver that tries to automatically determine the problem you are trying to optimise by observing the structure of the spreadsheet. It will turn its best guess into a Solver model, which you can then edit in this window.
Objective Cell: $G$15
maximise minimise target value: 0
Variable Cells: $F$3:$F$5,$K$3:$K$5
Constraints:
<Add new constraint>
$F$6 <= $B$2
$K$6 <= $K$6
$F$11 = $B$6
$F$12 = $B$7
$F$13 = $B$8
$F$3 int
$F$4 int
$F$5 int
$K$3 int
$K$4 int
$K$5 int
=
Add constraint
Cancel
Delete selected constraint
Make unconstrained variable cells non-negative
Show named ranges in constraint list
Sensitivity Analysis
List sensitivity analysis on the same sheet with top left cell:
Output sensitivity analysis: updating any previous output sheet on a new sheet
Solver Engine:
Current Solver Engine: CBC
Solver Engine...
Show model after saving
Clear Model
Options...
Save Model
Cancel

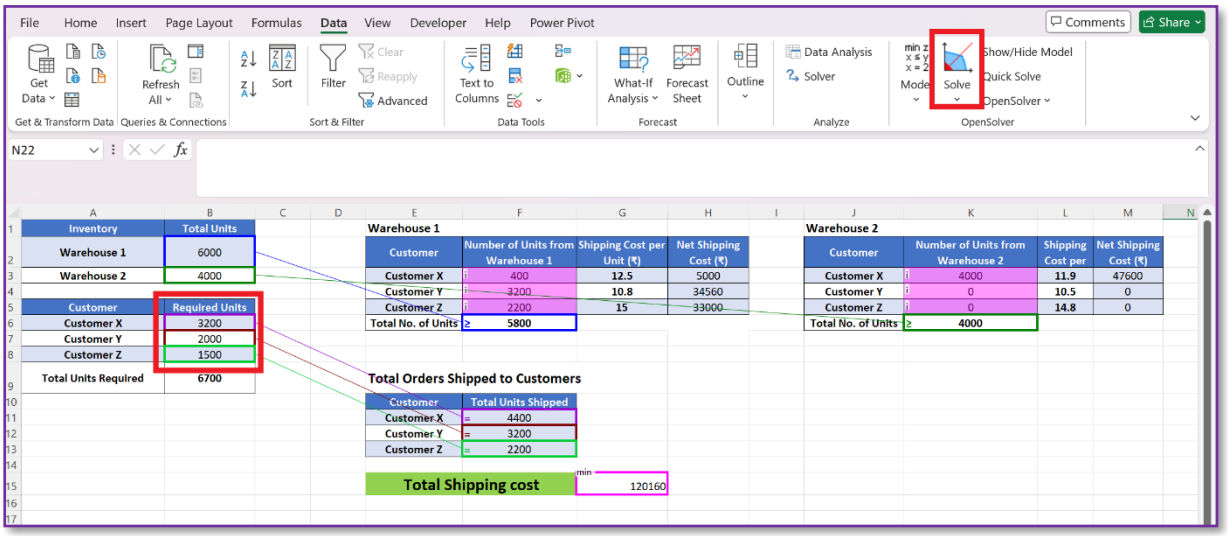
3. The Model Preview will be displayed, allowing you to verify all constraints. Click on **Solve** to execute the OpenSolver calculation.

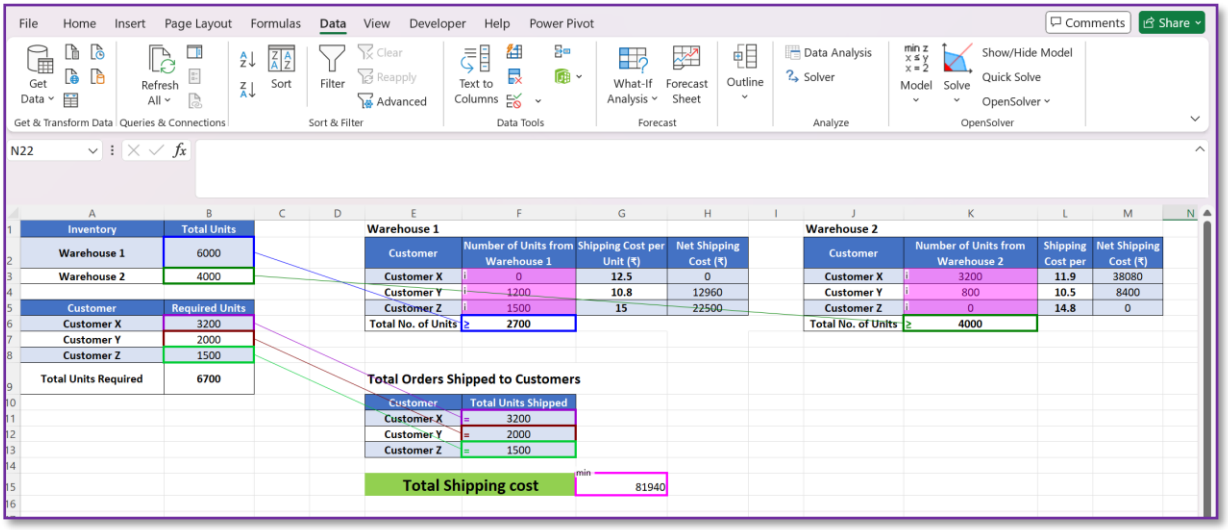




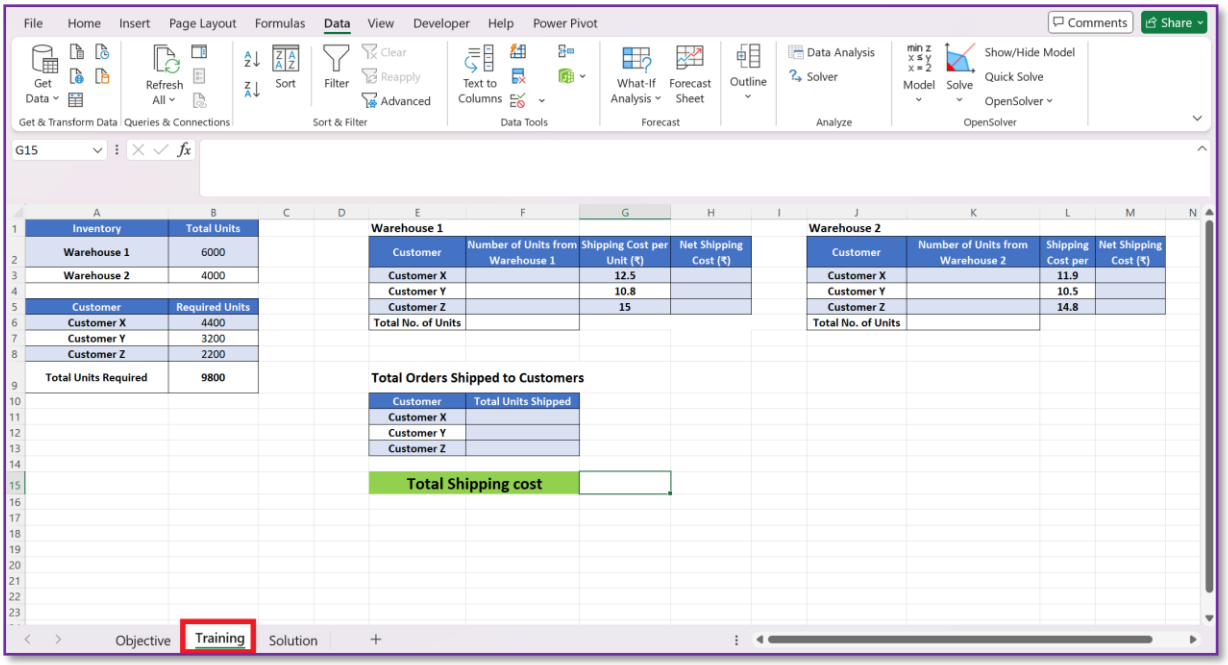


4. Modify the Customer Required Units and click on **Solve** again to run the updated calculation.





5. Use the **Training Sheet** to practice and run trial calculations.
   Note: ***Ensure all calculations are set up correctly before running OpenSolver.***
   Formulas for reference:
   - Net Shipping Cost (₹) = Number of Units from Warehouse * Shipping Cost per Unit (₹)
   - Total Units Shipped = Warehouse 1 (Total No. of Units) + Warehouse 2 (Total No. of Units)
   - Total Shipping cost = Warehouse 1 [Net Shipping Cost (₹)] + Warehouse 2 [Net Shipping Cost (₹)]



Inventory	Total Units
Warehouse 1	6000
Warehouse 2	4000

Customer	Required Units
Customer X	4400
Customer Y	3200
Customer Z	2200
Total Units Required	9800

Warehouse 1

Customer	Number of Units from Warehouse 1	Shipping Cost per Unit (₹)	Net Shipping Cost (₹)
Customer X		12.5	
Customer Y		10.8	
Customer Z		15	
Total No. of Units			

Warehouse 2

Customer	Number of Units from Warehouse 2	Shipping Cost per	Net Shipping Cost (₹)
Customer X		11.9	
Customer Y		10.5	
Customer Z		14.8	
Total No. of Units			

Total Orders Shipped to Customers

Customer	Total Units Shipped
Customer X	
Customer Y	
Customer Z	

Total Shipping cost